

# **TRIENNIAL REVIEW**

**Commonwealth of Virginia  
Department of Environmental Quality  
Notice of Intended Regulatory Action  
WATER QUALITY STANDARDS**

**PUBLIC MEETING**

**September 10, 2013**

**DEQ-PRO**





# WHY?

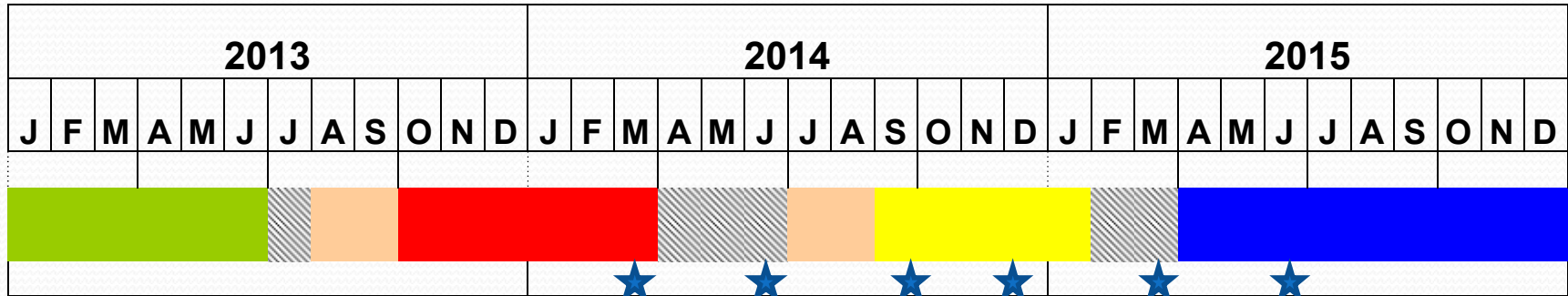
- **Federal Clean Water Act requires a review & update of Water Quality Standards every three years.**
- **Virginia's Last Triennial Review was completed February 2010**



# Triennial Review used to update Water Quality Standards

- Public comments and Advisory Committees will help identify needed amendments.
- Amendments will then be proposed and public comments reviewed before presenting recommendations to the State Water Control Board for adoption.
- Entire process takes 18 to more than 24 months.
- EPA approval required before amendments become effective

# TRIENNIAL REVIEW TIMELINE



Approximate time of SWCB meeting



Technical Development



DBP and Executive Review 28 Days - 14 for DPB, 14 for SNR and Gov\*



NOIRA or NOPC Comment Periods



180 Days Includes Ad Hoc, Proposal Development, and go to Board



150 Days - Public Comment Review, Board Adoption



Final Stage Includes Final Publication, AGO Certification, EPA Approval

\*No time limit for Gov. pre-NOPC and pre-Final stages



# Triennial Review of VA Water Quality Standards

- NOIRA issued August 12
- Comment period closes October 11
- Agency background document on Town Hall
- Identified ~ 50 issues under consideration by the agency, but we are not limited to those

## **Rulemaking updates/info:**

[www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityStandards.aspx](http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityStandards.aspx)

# Issues Being Considered

- **Criteria**
- **Bacteria**
- **Special Standards**
- **Trout Waters**
- **Public Water Supply**
- **River Basin Table clarifications**
- **Miscellaneous Issues**

“Everything but the....”





# Revisit Left Over Issues

- **Manganese:** Natural conditions often exceed the criterion (EPA disapproved previous amendment)
- **Lead criteria:** slight “conversion factor” adjustments to allow the lead criteria concentrations to be expressed as dissolved measurements instead of total recoverable.
- **Cadmium:** VA will consider revising the old criteria for cadmium in freshwater based on more recent data.

# Manganese (Mn)

- Originated as Safe Drinking Water Act secondary maximum contaminant
- Protect drinking water supplies from staining properties of Mn (50 ug/l)
- Expressed in WQS as total; most other metals expressed as dissolved

The Issue:

Soils & underlying geology of many regions of VA naturally high in Mn & Mn compounds



# Lead (Pb)

Inclusion of conversion factor  
to express criteria as dissolved

Freshwater

Saltwater

Acute	Chronic	Acute	Chronic
<del>120</del> <u>94</u> WER = 1 CaCO <sub>3</sub> = 100	<del>14</del> <u>11</u> WER = 1 CaCO <sub>3</sub> = 100	<del>240</del> <u>230</u> WER=1	<del>9.3</del> <u>8.8</u> WER=1

# Cadmium (Cd)

Possible revision of old criteria for Cd in freshwater based on more recent data.

## Freshwater

Acute	Chronic
<del>3.9</del> <u>1.8</u> WER = 1 CaCO <sub>3</sub> =100	<del>1.1</del> <u>0.52</u> WER = 1 CaCO <sub>3</sub> = 100





# Updates to the Numerical Criteria

**EPA expects States to use the Triennial Review to update the numerical criteria to account for recent changes in science and EPA's more recent criteria recommendations.**

# EPA New or Revised Criteria

- Bacteria Criteria - protection of recreation (swimming)
- Ammonia Criteria - protection of aquatic life
- Copper – Biotic Ligand Model (BLM) – aquatic life
- Acrolein – aquatic life
- Carbaryl – aquatic life



# **New EPA Recommendation**

## **Bacteria Criteria for Protection of Recreation (swimming)**

- Finalized bacteria criteria October, 2012.
- Bacteria indicator species & allowable geometric mean concentrations remain the same.
- New recommendations for Statistical Threshold Value (allowable 10% excursion frequency) raised from previous “Single Sample Maximum”.
- Criterion applied during any 30 day interval.
- Implementation guidance not yet issued by EPA; due by end of 2013.

Criteria Elements	EPA Recommendation 1	Theoretical Illness Rate (36/1000 illness rate) (Same as current criteria)	Alternate EPA Recommendation 2	Theoretical Illness Rate (32/1000 illness rate) (Slightly more protective)
Indicator (freshwater)	Geometric Mean (GM) cfu/100 ml	Statistical Threshold Value STV cfu/100 ml 10% exceedence	GM (cfu/100 ml)	STV (cfu/100 ml) (10% exceedence)
Virginia criterion E. coli	126	235 Single sample maximum (SSM)		
EPA 2012 E. coli	126	410 (STV)	100	320 (STV)
Indicator (marine water)	Geometric Mean (GM) cfu/100 ml	Statistical Threshold Value STV cfu/100 ml 10% exceedence	GM (cfu/100 ml)	STV (cfu/100 ml) (10% exceedence)
Virginia criterion Enterococci	35	104 Single sample maximum (SSM)		
EPA 2012 Enterococci	35	130 (STV)	30	110 (STV)



# New EPA Recommendation

## Ammonia Criteria for Protection of Aquatic Life

- Final criteria recommendations published in Federal Register August 22, 2013.
- Accounts for latest toxicity data for sensitive freshwater mussels and snails.
- Criteria calculation is pH and temperature dependent.
- Usual language regarding recalculation procedure for site-specific criteria derivation, variances, revised designated uses, dilution allowances and compliance schedules.

# Ammonia Criteria

Past and current EPA-recommended criteria for ammonia. Criteria expressed as total ammonia nitrogen (mg TAN/L) at pH 7 and 20°C.

Criterion Duration	1999 Criteria	2009 Draft Updated Criteria	2013 Final Updated Criteria
Acute (1-hour average)	24	19	17
Chronic (30-day rolling average)	4.5*	0.91*	1.9*
*Not to exceed 2.5 times the criterion continuous concentration as a 4-day average within a 30-day period.			
Criteria frequency: Not to be exceeded more than once in three years on average.			



# Ammonia Criteria

Examples of current DEQ criteria compared to EPA (2013) criteria at pH 7 and 20°C.

	Acute (mg/L)	Chronic (mg/L)
EPA (2013)	17	1.9
DEQ (trout absent)	36.1	
DEQ (trout present)	24.1	
DEQ (early life stage absent)		4.15
DEQ (early life stage present)		4.15



# **New EPA Recommendation**

## **Copper - Freshwater Aquatic Life**

- EPA recommends a “biotic ligand model” (2007) based criteria that adjusts the copper criteria to site-specific conditions.



# New EPA Recommendation

## Aquatic Life Criteria:

- **Acrolein (biocide)**: current VA criterion = 9.3 ug/l (for human health protection)
  - criterion final in August 2009
  - Recommended for FW ALU = 3.0 micrograms/liter
- **Carbaryl (pesticide Sevin<sup>®</sup>™)**: no current VA criterion
  - criterion final in May 2012
  - Recommended = 2.1 micrograms/liter in freshwater and 1.6 micrograms/liter in saltwater

# Criteria (Swamps)

9 VAC 25-260-50, 390 – 540

- Designate new waters as Class VII (Swamp Waters)





# Trout Waters

**9 VAC 25-260-50, 370, 390 – 540**

- Add, modify or delete trout waters as appropriate.
- Adjust application of temperature criteria to winter-only stockable streams during summer





# Public Water Supply

9 VAC 25-260- 390 – 540

- Add, modify or delete public water supply designations per VDH





# Regulatory Advisory Panel

- Send requests by September 11, 2013

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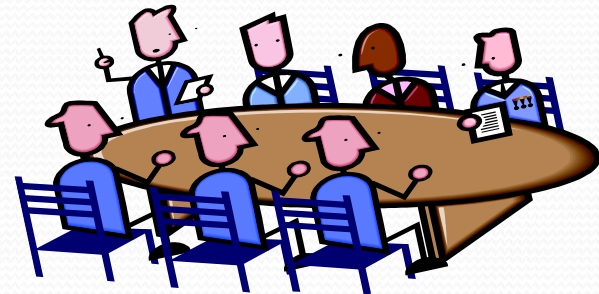
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